Docket No.: M-5692 US

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September 28, 1999

Box Patent Application
Assistant Commissioner for Patents
Washington, D. C. 20231

Enclosed herewith for filing is a patent application, as follows:

Inventor(s): Bobrov, Yuri; Ignatov, Leonid; Khan, Ir Gvon
Title: Decorative Material And Method Of Its Fabrication

X Return Receipt Postcard
X This Transmittal Letter (in duplicate)
X Preliminary Amendment (2 pages)
3 pages Declaration For Patent Application and Power of Attorney
11 pages Specification (not including claims)
3 pages Claims
1 page Abstract
1 Sheet of Drawings
2 page(s)Verified Statement Claiming Small Entity Status (37 CFR 1.9(f) & 1.27(c))--Small Business Concern
☒ Other: Petition Under 37 C.F.R. 1.47(a) In Connection With An Inventor Who Refuses To Sign The Declaration (2 pages); Exhibit A, Exhibit B and Exhibit C; Explanation of Documents Submitted For Assignment to Optiva Inc. (3 pages); Recordation Cover Sheet and Assignment from Yuri Bobrov and Leonid Ignatov to Optiva Inc.; Recordation Cover Sheet and Assignment from Ir Gvon Khan to Zao Quanta Invest; Recordation Cover Sheet and Assignment from Zao Quanta Invest to Polarizer International LLC; and Recordation Cover Sheet and Written Consent For Assets Transfer to Optiva.

CLAIMS AS FILED (fees computed under §1.9(f))

For	Number Filed			Number Extra		Rate			Basic Fee 380.00
Total Claims	12	-20	=	0	x	$9	=	$	0.00
Independent Claims	5	-3	=	2	x	$39	=	$	78.00
☒ Application contains one or more multiple dependent claims ($130 total fee)								$	130.00

Please make the following charges to Deposit Account 19-2386:

☒ Fee for filing the patent application in the amount of $ 588.00

☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account 19-2386.

EXPRESS MAIL LABEL NO:
EL 252 576 071 US

Respectfully submitted,

Roberta P. Saxon

Roberta P. Saxon
Agent for Applicant(s)
Reg. No. 43,087

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Bobrov, Yuri; Ignatov, Leonid; Khan, Ir Gvon		
Assignee:	OPTIVA, Inc.		
Title:	DECORATIVE MATERIAL AND METHOD OF ITS FABRICATION		
Serial No.:	Unknown	Filed:	Herewith
Examiner:	Unknown	Group Art Unit:	Unknown
Docket No.:	M-5692 US		

BOX PATENT APPLICATION
ASSISTANT COMMISSIONER FOR PATENTS
Washington, D. C. 20231

VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(F) & 1.27(C)) -- SMALL BUSINESS CONCERN

Dear Sir:

I declare that I am an official empowered to act on behalf of the concern identified above as assignee.

Exclusive rights to the above invention as described in

☒ the specification filed herewith,

☐ U.S. patent application Serial No. , filed

have been conveyed to and remain with the above concern.

For purposes of paying reduced fees under Section 41 of Title 35 of the United States Code with regard to this invention, I declare that the above concern qualifies as a small business concern as defined in 37 CFR 1.9(d) and 13 CFR 121, and more particularly 13 CFR 121.802, namely, (a) the concern's number of employees, including those of its affiliates, does not exceed 500 persons, and (b) the concern has not assigned, granted, conveyed, or licensed, and is under no obligation to assign, grant, convey, or license, any rights in the invention to any person who made it and could not be classified as an independent inventor under 37 CFR 1.9(c), or to any concern

which would not qualify as a nonprofit organization under 37 CFR 1.9(e) or a small business concern under 37 CFR 121.802.

I acknowledge my duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate per 37 CFR 1.28(b).

I declare that all statements made herein of my own knowledge are true, all statements made herein on information and belief are believed to be true, and all statements made herein are made with the knowledge that whoever, in any matter within the jurisdiction of the Patent and Trademark Office, knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing the same to contain any false, fictitious or fraudulent statement or entry, shall be subject to the penalties including fine or imprisonment or both as set forth under 18 U.S.C. 1001, and that violations of this paragraph may jeopardize the validity of the application or this document, or the validity or enforceability of any patent, trademark registration, or certificate resulting therefrom.

Signature: Carl Cobb Date: 27 September, 1999

Official's Name: Carl Cobb

Official's Title: Executive Vice-President

Concern's Name: Optiva, Inc.

Concern's Address: 1670 S. Amphlett Blvd., Suite 214
San Mateo, California 94402

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Bobrov, Yuri; Ignatov, Leonid; Khan, Ir Gvon		
Assignee:	OPTIVA, Inc.		
Title:	DECORATIVE MATERIAL AND METHOD OF ITS FABRICATION		
Serial No.:	Unknown	Filed:	Herewith
Examiner:	Unknown	Group Art Unit:	Unknown
Docket No.:	M-5692 US		

San Jose, California
September 28, 1999

ASSISTANT COMMISSIONER FOR PATENTS
Washington, D. C. 20231

PRELIMINARY AMENDMENT

Dear Sir:

Please enter the following amendment before consideration of the above-referenced application on the merits.

IN THE SPECIFICATION

Page 4, lines 26-27 Please delete "and Ψ values" and substitute --value--.

Page 4, line 27 Please delete "formulas (1) and (2)" and substitute --the above formula--.

IN THE CLAIMS

4. (Amended) A decorative material according to Claims 1 [and] or 3, distinguished by that the anisotropic film is placed in a transparent vessel filled with a transparent or weakly colored liquid medium, while polarizers are placed on the inner or outer surface of the vessel.

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10. (Amended) A method for the fabrication of decorative materials according to Claims 8 [and] or 9, distinguished by that the anisotropic layer transparent in the visible range is obtained using aqueous and aqueous-organic solutions of aromatic compounds absorbing in the spectral range below 400 nm, selected among a series of organic and inorganic salts of alkylbenzene sulfonates, sulfonic acids of the naphthalene series, mono- and polysulfonic acids of the derivatives of benzoimidazole and benzothiazole, anthraquinone, phenanthrene, amino-, hydroxy-, halido-, nitro-, and alkylanthraquinones, benzanthrone, 3-bromobenzanthrone, and water-soluble organic belofores and bleaching agents.

REMARKS

Applicants respectfully request the above amendments be entered to conform the claims to acceptable wording for multiple dependent claims according to MPEP §608.01(n) and to correct typographical errors.

Should the Examiner wish to discuss any aspect of this application, the Examiner is invited to telephone the undersigned agent for Applicants at (408) 453-9200.

Respectfully submitted,

Roberta P. Saxon

Roberta P. Saxon
Agent for Applicants
Reg. No. 43,087

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DECORATIVE MATERIAL AND METHOD OF ITS FABRICATION

Yuri A.Bobrov
Leonid Y. Ignatov
Ir Gvon Khan

The invention refers to the field of fabrication of decorative materials and stained-glass windows on the basis of optical effects in polarized light and can be used in decorative art, advertising, and for the production of show windows, decorative screens, etc.

As is known, the polarized light is capable of producing a number of optical effects that can be used for various purposes. For example, a polarizer is able to modify the intensity of transmitted polarized light depending on the mutual orientation of the polarization plane of light and the polarization axis. This ability is used for the formation of images in indicators and other information display devices based on liquid crystals.

Another optical effect, which appears when an anisotropic nonabsorbing film is placed between crossed polarizers, can be used for the obtaining of iridescent colors. In this case, a nontransparent state of the polarizers is changed for clarification and the system acquires interference colors depending on the orientation of the anisotropic film and the viewing angle. This phenomenon can be used for the production of decorative images and stained glass windows. For example, invention [1] offered a decorative color material having a sandwich structure, including a glass substrate, an optically transparent film, and a phase-shifting plate or a polarizing plate on which fragments of the phase-shifting plate (having properly selected

colors and cut according to a designed pattern) are glued to form a mosaic. This sandwich structure is confined between layers of polarizing plates. When the light is transmitted through this structure, each element of the mosaic acquires certain color depending on the viewing angle. Rotation of the polarizers or variation of the viewing angle will change the color of each element in the mosaic.

A disadvantage of the known material is that it consists of separate elements cut from an optically anisotropic transparent film so as to have certain orientations. This implies considerable difficulties in the production of this material, since the process of cutting, assembling, and fixing the elements of mosaic involves manual low-productivity operations significantly increasing the costs of such decorative glasses.

The purpose of the present invention was to create a decorative material comprising a continuous optically anisotropic film and to simplify the production technology so as to exclude the labor- consuming stages of the decorative glass fabrication involving cutting individual elements for a mosaic from an optically anisotropic material, assembling the pattern, and fixing the mosaic on a substrate.

This task was solved by forming a mosaic structure of the decorative material either by inducing local changes in the optical properties of an initially homogeneous anisotropic or isotropic film or by depositing a polarization coating onto an optically homogeneous anisotropic transparent film. The polarization axis of the coating varies in a preset manner so as to form the required mosaic pattern.

Let us consider in more detail the physical backgrounds of the proposed solution. The interference phenomena in the polarizer-- birefringent transparent film--polarizer system appear because the light beam in the birefringent plate splits into ordinary and extraordinary rays that interfere with each other upon exit from the film to form an elliptically polarized beam. The shape of the polarization ellipse and the orientation of its axes depend on the optical phase shift between ordinary and extraordinary rays at the exit from the birefringent film and on the orientation of the polarization plane of the incident light beam relative to the principal directions (axes) of the refractive index of the film. The orientation of the polarization plane is determined by angles between the axes of the refractive index ellipsoid and the polarization axis. The phase shift is given by the expression:

$$\delta = (n_e - n_0)\, d/\cos\Psi,$$

where n_e and n_0 are the refractive indices of ordinary and extraordinary rays, d is the film thickness, and Ψ is the angle between the light beam propagating in the film and the normal to the film plane. The shape of the polarization ellipse may change from circular ($\delta = \lambda/4$) to linear ($\delta = \lambda/2, \lambda$) and the angles between the long axis of the ellipse and the principal axes of the refractive index tensor may vary from 0 to 90°. When the polarization plane of light is oriented at 45° relative to the axes of optical anisotropy of the phase-shifting film and $\delta = \lambda/2$, the phase-shifting film rotates the polarization plane of the incident light by 90°. As a result, the beam will

pass without attenuation through the second polarizer occurring in the crossed position with respect to the first polarizer. If $\delta = \lambda$, the polarization plane orientation will remain unchanged and the light will be blocked by the second polarizer. For intermediate δ values, the light with elliptic polarization will be partly transmitted through the second crossed polarizer. Because the refractive indices n_0 and n_e depend on the wavelength, the conditions $\delta = \lambda/2$ and $\delta = \lambda$ will be satisfied only for a definite light wavelength. Therefore, if the light is nonmonochromatic, the optical system polarizer--birefringent transparent film--polarizer acquires certain color that changes depending on the viewing angle. The color will also depend on the d and Ψ values. As is seen from formulas (1) and (2), a mosaic pattern can be formed by changing one of the parameters determining the shape or orientation of the polarization ellipse of the transmitted light wave: n_e, n_0, d, Ψ.

An important distinguishing feature of the proposed solution is that the decorative material is based on either an anisotropic film with varying optical properties, placed between two polarizers, or an anisotropic film with homogeneous optical properties, onto which a polarization coating with variable polarization axis orientation is deposited from one or both sides

Anisotropic films with variable optical properties are formed by embossment or a local thermal treatment of the initially anisotropic film. Another method consists in covering a substrate with a thin film of a

substance in which molecules, having no principal absorption bands in the visible range, can acquire a preset orientational order.

A polarization coating with variable orientation of the polarization axis can be formed by known methods described in patents [2--4].

Embossing of a homogeneous anisotropic film creates regions with different thicknesses that provide a differential phase shift and, hence, various coloration of these regions. In order to ensure that two neighboring mosaic elements, having refractive indices differing by $\Delta n = 0.1$, would appear as differently colored, the film thicknesses in these regions must differ by 1--3 μm.

The embossing technology is based on pressing a polymeric film between two surfaces of a press mold, one or both bearing a desired pattern engraved on the surface. Another method of embossing consists in rolling a polymeric film between two cylinders. The desired pattern is engraved on the surface of one or both rollers. The mold or roller engraving consists in creating a depression (0.1 to 10 μm deep) along the periphery of the pattern, which can be produced by chemical or electrochemical etching, depositing a metal film, mechanical engraving, or by any other known method. When the patterns are made on both surfaces of the press mold or rollers, the contours may either coincide or not. For the same contour shapes, both patterns can represent protruding or recessing elements; it is also possible that elements on one surface are made as protrusions, while the opposite mold surface has the same elements in the form of recessions, whereby the two surfaces are fitting one

another in the course of embossing to form different gaps in the neighboring regions. In order to facilitate the process of embossing, the rollers (or the press mold) are heated to a softening temperature of the polymeric film. In order to level the film surface after the process and to restore a uniform film thickness, while retaining local changes in the optical path length, the surface of the anisotropic film is coated with an isotropic layer of a lacquer or polymer.

Variation of the optical properties of an anisotropic film by local heating can be performed by directly or indirectly touching the surface with a tool heated to the required temperature, or by treating the surface with a torch flame, or by blowing it with a hot gas stream.

Anisotropic optically transparent layers with homogeneous or variable optical properties are obtained by depositing thin films of molecularly oriented substances onto an isotropic substrate. for this purpose we may use compounds or their solutions that can occur in a liquid-crystalline (LC) state, such as low-molecular- mass liquid crystals having melting points above the ambient temperature, LC polymers [5], or some other low-molecular-mass substances capable of forming elongated molecular aggregates in solution [2].

Besides the dyes [2], the anisotropic layers transparent to visible light can be obtained using aqueous or aqueous-organic solutions of aromatic compounds absorbing in the spectral range below 400 nm, which can be selected among organic and inorganic salts of alkylbenzene sulfonates, sulfonic acids of the naphthalene series, mono- and polysulfonic acids of the derivatives of benzoimidazole and benzothiazole,

anthraquinone, phenanthrene, amino-, hydroxy-, halido-, nitro-, and alkylanthraquinones, benzanthrone, 3-bromobenzanthrone, and water-soluble organic belofores and bleaching agents.

The LC films are deposited by known methods described in detail in patents [2, 3], based on the squeegee, die, and roller techniques. In these technologies, the process of LC solution deposition is accompanied by orientation of the molecules under the action of viscous forces developed in the course of deposition due to stretching of the liquid layer, shifting one layer relative to another, or specially treating the surface to render it anisotropic. For depositing liquid crystals occurring in the solid state under usual ambient conditions, the compounds are preliminarily transformed into an LC state by heating to the melting temperature. All these techniques can be used to obtain elements with different thicknesses. For this purpose, a stepped, wedge-shaped, or other relief with depth variations within 1--15 μm is formed on the surface of the application device. In order to obtain a mosaic structure with differential orientation of optical axes in the anisotropic layer, the application device (die or squeegee) must perform reciprocating motions in the direction perpendicular to the direction of motion of the base to which the anisotropic film is applied. In the case of roller technology, this is achieved by producing a relief of elongated grooves, making certain angle with the cylinder generating line, on the surface of rollers. These grooves render the roller surface anisotropic and provide the orientation of molecules in a desired direction.

An alternative method of obtaining anisotropic films with variable direction of optical axes and differential refractive indices is based on the known method of inducing the optical anisotropy by directional photopolymerization or simply irradiating a polymeric film on a substrate with polarized light [6].

A decorative material with interference-colored mosaic structure can be also obtained using a single polarizer. In this case, the rear polarizer is replaced by a mirror- or diffuse-reflecting surface layer. This layer is obtained by depositing a film of aluminum or some other high-reflectance material or by gluing a reflecting metal foil, mirror, or some other reflecting film. A polarizer is fastened on the opposite side of the structure.

In order to obtain original optical effects, the anisotropic film can be given a certain shape and fastened on a transparent object having a preset density. All this system is placed inside a closed volume filled with a transparent liquid, e.g., water or an organic solvent, so that the anisotropic film and the base object would be immersed in the liquid. The polarizers are glued onto the outer surface of the vessel. When viewed through the walls of the vessel with glued polarizers, motions of the object carrying the anisotropic film will produce an interplay of colors. The base with preset density can be a hollow object made of glass, plastic, or some other transparent material.

The structure of the decorative material is depicted in more detail in Figs. 1--4, and the methods of its fabrication are illustrated in Fig. 5.

Figure 1 shows a decorative material in which the mosaic effect is due to the differential thickness of neighboring regions in an anisotropic film 1. the anisotropic film is placed between two polarizers 2 whose polarization axes can be oriented at an arbitrary angle, although the most pronounced effect is achieved for 90°. In order to improve the optical properties and consolidate the structure, one or both polarizers can be glued onto the anisotropic film 1. The structure is protected from the action of ambient factors by glass plates 3 or by some other rigid transparent material 4, mechanically fastened or glued on one or both sides. The durability of polarizers and anisotropic film can be further increased by application of a film 5 absorbing in the UV and IR spectral ranges.

Figure 2 shows a decorative material in which the anisotropic film is represented by a molecularly ordered layer 1 of a compound, transparent in the visible range, deposited onto an isotropic substrate 6. The mosaic effect is ensured by differential orientation of optical axes of the neighboring elements. All other parts of the structure are the same as in Fig. 1.

Figure 3 shows a decorative material in which the optically anisotropic film has otherwise homogeneous properties and the mosaic effect is achieved by placing polarization coatings 2 onto both sides of the anisotropic film. One or both of these coatings have different directions of the polarization axes in the neighboring mosaic elements.

Figure 4 shows a decorative material with a reflecting layer 3 replacing one of the polarizers.

Figure 5 illustrates the method of embossing used for the obtaining of an optically anisotropic film. Anisotropic film 1 with uniform thickness is rolled between rotating cylinders 2 and 3 whose surfaces contain recessions 4 and protrusions 5 forming the regions of differential thickness. In order to render plastic properties to the polymeric film 1, the rollers are heated to a temperature close to the melting temperature of the polymer.

The interaction of a decorative element with transmitted light is illustrated as follows. The light beam 1 (Fig. 1) passes through polarizer 2 and strikes the phase-shifting plate 3. Each element of the mosaic pattern splits the incident light into ordinary and extraordinary rays propagating with different velocities. Because the mosaic elements have different thicknesses, each of them produces its own phase shift between the ordinary and extraordinary rays As a result, all beams at the exit from the phase-shifting plate will have different ellipticity that accounts for the differential light transmission through the second polarizer. For a nonmonochromatic light, this will also lead to different colors of the mosaic elements. In a mosaic characterized by different orientations of optical axes in the neighboring elements (Fig. 2), the polarized light beams passing through the neighboring elements will have different orientations of the axes of polarization ellipse, which will also result in a different attenuation of the light flux transmitted through the second polarizer. If the mosaic effect is produced by a mosaic distribution of polarization axes in one of the polarizers (Fig. 3), a homogeneously polarized light passing through polarizer 2 strikes the phase-shifting plate 1 and homogeneously changes its

polarization over the entire area of the decorative plate. when the light passes through the second polarizer 3, in which the neighboring mosaic elements have different directions of the polarization axes, the beam will be differently attenuated in each element, thus acquiring different colors. A decorative material with reflecting layer (Fig. 4) acts similarly to the system with two polarizers. The light passes through the polarizer and is doubly transmitted through the anisotropic medium, being reflected from the rear surface. As a result, the light beam passing through each mosaic element acquires the corresponding phase shift and leaves the system through the same polarizer, which acts as the second polarizer upon the output light beam.

As is seen from the above description, the proposed solution allows us to obtain a decorative material comprising a continuous optically transparent material, rather than separately cut mosaic elements, which markedly simplifies the production technology.

Information sources used for the application:

1. JP No. 4-307300(A), 29.10.1992, Int CI5 B44 CI/28, B44 F1/06. Prototype.

2. Appl. PCT WO 94/28073; C09B 31/147, 31/30; Publ. 08.12.94.

3. US Pat. No. 2,400,877, CI 350-155, May 28, 1946.

4. JP No. 1-183602(A), Int. CI5 G 02B5/30, G 02B1/08, 21.07.1989.

5. US Pat. No. 5,247,377, G 02F 1/13, Sep. 21, 1993.

6. SU No. 1015326, G 02 B 5/30, 25.01.82.

CLAIMS

We Claim:

1. A decorative material comprising two polarizers, having arbitrary directions of their polarization axes, and phase- shifting plates placed between the polarizers, having variable thicknesses or different orientations of their optical axes and forming a pattern or a mosaic structure. The material is distinguished by that the phase-shifting plate represents a continuous layer of an optically anisotropic material containing regions differing by the value of phase shift and/or the direction of fast optical axis.

2. A decorative material according to Claim 1, distinguished by that the optically anisotropic material represents a molecularly oriented film deposited onto an optically isotropic base.

3. A decorative material comprising two polarizers, having arbitrary directions of their polarization axes, and phase- shifting plates placed between the polarizers, having variable thicknesses or different orientations of their optical axes and forming a pattern or a mosaic structure. The material is distinguished by that the phase-shifting plate is represented by a continuous layer of a homogeneous anisotropic material, while one or both polarizers may contain several elements differing by the directions of their polarization axes.

4. A decorative material according to Claims 1 and 3, distinguished by that the anisotropic film is placed in a transparent vessel filled with a transparent or weakly colored liquid medium, while polarizers are placed on the inner or outer surface of the vessel.

5. A decorative material according to Claim 3, distinguished by that one or both polarizers represent a film of molecularly oriented organic substance deposited either immediately onto an optically anisotropic material or onto a transparent sublayer predeposited onto the surface of an anisotropic material.

6. A decorative material according to Claim 5, distinguished by that the molecularly oriented film is represented by a layer of an organic substance comprising lyotropic liquid crystals or thermotropic liquid crystals having the temperature of transition from solid to LC state above the ambient temperature.

7. A decorative material comprising two polarizers, having arbitrary directions of their polarization axes, and phase- shifting plates placed between the polarizers, having variable thicknesses or different orientations of their optical axes and forming a pattern or a mosaic structure. The material is distinguished by that one of the polarizers is replaced by a reflecting surface.

8. A method for the fabrication of decorative materials, including the formation of a mosaic from elements of an optically anisotropic material, placing this mosaic between two polarizers, and fixing the

entire structure by gluing. The method is distinguished by that the mosaic is formed by embossing optically anisotropic polymeric film.

9. A method for the fabrication of decorative materials, including the formation of a mosaic from elements of an optically anisotropic material, placing this mosaic between two polarizers, and fixing the entire structure by gluing. The method is distinguished by that the mosaic is formed by local thermal treatment of the optically anisotropic polymeric film.

10. A method for the fabrication of decorative materials according to Claims 8 and 9, distinguished by that the anisotropic layer transparent in the visible range is obtained using aqueous and aqueous-organic solutions of aromatic compounds absorbing in the spectral range below 400 nm, selected among a series of organic and inorganic salts of alkylbenzene sulfonates, sulfonic acids of the naphthalene series, mono- and polysulfonic acids of the derivatives of benzoimidazole and benzothiazole, anthraquinone, phenanthrene, amino-, hydroxy-, halido-, nitro-, and alkylanthraquinones, benzanthrone, 3-bromobenzanthrone, and water-soluble organic belofores and bleaching agents.

DECORATIVE MATERIAL AND METHOD OF ITS FABRICATION

Yuri A.Bobrov
Leonid Y. Ignatov
Ir Gvon Khan

ABSTRACT

A decorative material in which the mosaic effect is due to the differential thickness of neighboring regions in an anisotropic film is disclosed wherein the anisotropic film is placed between two polarizers and the structure is protected from the action of ambient factors by glass plates or other rigid transparent material as shown in figure (1).

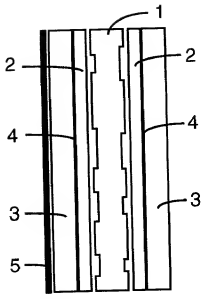

FIG. 1

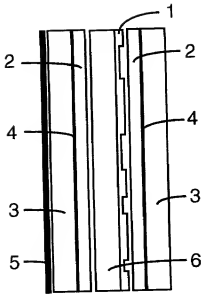

FIG. 2

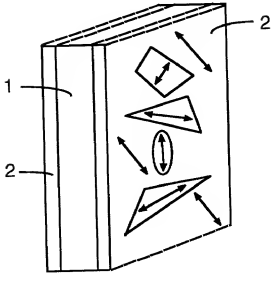

FIG. 3

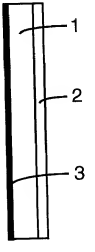

FIG. 4

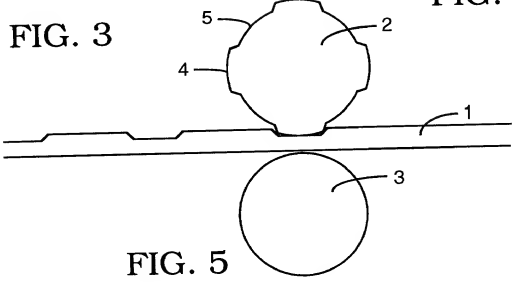

FIG. 5

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July 28, 1999

VIA FEDERAL EXPRESS

Mr. Ir Gvon Khan
Russia, Moscow Region
141700, Dolgoprudny City
prospect Patsaeva 17, kv. 26

Re: PCT Patent Application entitled: "Decorative Material And Method Of Its Fabrication"

Inventors:	Bobrov, Yuri; Ignatov, Leonid; Gvon, Khan Ir
PCT Serial No.:	US98/05,394
Filing Date:	03/25/98
Our Reference:	M-5692 PCT

Dear Mr. Khan:

Enclosed is a declaration for the above-identified patent application. A copy of the application as filed with the PCT Office on March 25, 1998, is also enclosed. Please sign and date the declaration where indicated on page 3.

Your signature on the enclosed declaration only acknowledges that you are one of the inventors. The declaration document does not affect assignment or ownership of rights in this invention. However, we represent Optiva, Inc. and you may want to consult your own legal counsel regarding the declaration document.

Please return the signed declaration to us as soon as possible. A pre-addressed envelope is included for your convenience. Unless we receive the signed declaration by August 28, 1999, we will presume you are refusing to sign a declaration for the patent application.

Should you have any questions regarding this matter, please do not hesitate to contact us.

Sincerely,

Roberta P. Saxon

RPS/lmc
Enclosure
538896 v1

EXHIBIT
B

optiva inc.

Mr. Khan Ir Gvon
Russia, Moscow Region
141700, Dolgoprudny City
Prospect Patsaeva 17, kv. 26

August 14, 1999

Re: U.S. Patent Application entitled "Decorative Material And Method Of Its Fabrication"
Inventors: Bobrov, Yuri; Ignatov, Leonid; Gvon, Khan Ir
Serial No.: US98/05,394

Dear Mr. Khan:

Enclosed herewith is an Assignment and Declaration to be signed by the inventors for the above-identifies patent application. Enclosed please find a copy of PCT Application entitled "Decorative Material And Method Of Its Fabrication" as it was filed to US Patent Office.

Please sign the Assignment and Declaration enclosed in presence of two witnesses and then mail it to Optiva Office at: 1670 South Amphlett Blvd, Suite 214, San Mateo CA 94402 USA.

If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely yours,

Carl Cobb
Executive Vice-President

DELIVERED

Date: 26/08/99

Signature:

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EXHIBIT
A

DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below adjacent to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of subject matter (process, machine, manufacture, or composition of matter, or an improvement thereof) which is claimed and for which a patent is sought by way of the application entitled

Decorative Material And Method Of Its Fabrication

which (check) ☐ is attached hereto.
☐ and is amended by the Preliminary Amendment attached hereto.
☒ was filed on 03/25/98 as PCT International Application No. PCT/US98/05394
☐ and was amended on __ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

Prior Foreign Application(s)			Priority Claimed	
Number	Country	Day/Month/Year Filed	Yes	No
97105079	Russia	26/3/97	☒	☐

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

Provisional Application Number	Filing Date
N/A	

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) or PCT international application(s) designating the United States of America listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information, which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56, which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:

Application Serial No.	Filing Date	Status (patented, pending, abandoned)
N/A		

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith:

Alan H. MacPherson (24,423); Brian D. Ogonowsky (31,988); David W. Heid (25,875); Norman R. Klivans (33,003); Edward C. Kwok (33,938); David E. Steuber (25,557); Michael Shenker (34,250); Stephen A. Terrile (32,946); Peter H. Kang (40,350); Ronald J. Meetin (29,089); Ken John Koestner (33,004), Omkar K. Suryadevara (36,320); David T. Millers (37,396); Kent B. Chambers (38,839); Michael P. Adams (34,763); Robert B. Morrill (43,817); Michael J. Halbert (40,633); Gary J. Edwards (41,008); William B. Tiffany (41,347); James E. Parsons (34,691); Daniel P. Stewart (41,332); Philip W. Woo (39,880); John T. Winburn (26,822); Tom Chen (42,406); Fabio E. Marino (43,339); William W. Holloway (26,182); Elaine H. Lo (41,158); Don C. Lawrence (31,975); Marc R. Ascolese (42,268); Carmen C. Cook (42,433); David G. Dolezal (41,711); Roberta P. Saxon (43,087); Bernice Chen (42,403); Mary Jo Bertani (42,321); Dale R. Cook (42,434); Sam G. Campbell (42,381); Matthew J. Brigham (44,047); Glen B. Choi (43,546); Hugh H. Matsubayashi (43,779); Margaret M. Kelton (44,182); Joseph T. VanLeeuwen (44,383); William C. Cray (27,627); Patrick D. Benedicto (40,909); T.J. Singh (39,535); Shireen I. Bacon (40,494); Rory G. Bens (44,028). and George Wolken, Jr. (30,441).

Please address all correspondence and telephone calls to:

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I declare that all statements made herein of my own knowledge are true, all statements made herein on information and belief are believed to be true, and all statements made herein are made with the knowledge that whoever, in any matter within the jurisdiction of the Patent and Trademark Office, knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing the same to contain any false, fictitious or fraudulent statement or entry, shall be subject to the penalties including fine or imprisonment or both as set forth under 18 U.S.C. 1001, and that violations of this paragraph may jeopardize the validity of the application or this document, or the validity or enforceability of any patent, trademark registration, or certificate resulting therefrom.

Full name of first joint inventor: Yuri A. Bobrov

Inventor's Signature: _____ Date: 29 july 1999

Residence: Moscow, Zelenograd, Russia

Post Office Address: 103575, Moscow, Zelenograd, korp. 906, kv. 128, Russia

Citizenship: Russian

Full name of second joint inventor: Leonid Y. Ignatov

Inventor's Signature: _____ Date: 29 july 1999

Residence: Moscow, Angarskaia, Russia

Post Office Address: 127635, Moscow, ul. Angarskaia, 20, korp. 3, kv. 81, Russia

Citizenship: Russia

Full name of third joint inventor: Ir Gyon Khan

Inventor's Signature: _____ Date: _____

Residence: Moscow, Patsaeva, Russia

Post Office Address: 141700, Dolgoprudniy City, Moscow Region, pr. Patsaeva, 14, kv. 26, Russia

Citizenship: Russia

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Bobrov, Yuri; Ignatov, Leonid; Khan, Ir Gvon		
Assignee:	OPTIVA, Inc.		
Title:	DECORATIVE MATERIAL AND METHOD OF ITS FABRICATION		
Serial No.:	Unknown	Filed:	Herewith
Examiner:	Unknown	Group Art Unit:	Unknown
Docket No.:	M-5692 US		

San Jose, California
September 28, 1999

BOX PATENT APPLICATION
ASSISTANT COMMISSIONER FOR PATENTS
Washington, D. C. 20231

PETITION UNDER 37 C.F.R. 1.47(a) IN CONNECTION WITH AN INVENTOR WHO REFUSES TO SIGN THE DECLARATION

Dear Sir:

One of the inventors, Ir Gvon Khan, has refused to sign the declaration. Therefore, the Declaration is executed by the other inventors, both on behalf of themselves and on behalf of the unavailable inventor.

Per MPEP 409.03(a), "An oath or declaration signed by all the available joint inventors with the signature block of the non-signing inventor(s) left blank may be treated as having been signed by all the available inventors on behalf of the non-signing inventor(s), unless otherwise indicated."

The last known address for the refusing inventor is:

Russia, Moscow Region

141700, Dolgoprundny City

propsect Patsaeva 17, kv. 26

The pertinent facts regarding the refusal of Mr. Khan to sign the declaration are as follows:

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03 FC:122 130.00 CH

Upon information and belief, Mr. Khan has consistently expressed to Mr. Pavel Lazarev, Chairman of the Board, Optiva, Inc, his unwillingness to execute any documents with respect to filing the application in the U.S. PTO. On August 4, 1999, Optiva, Inc. delivered directly to Mr. Khan, a copy of the priority PCT Application together with the Declaration in order to obtain Mr. Khan's dated signature on the Declaration. A copy of the letter (Exhibit A) with Mr. Khan's signature on the bottom confirming the delivery is enclosed.

Further, on July 28, 1999, the undersigned sent Mr. Khan by International Federal Express another copy of the priority PCT Application and the Declaration paper for signature. Copies of the letter (Exhibit B) and Federal Express waybill (Exhibit C) are enclosed. Mr. Khan has not responded by the date indicated in the letter of July 28, 1999. However, if Mr. Khan provides a signed declaration in response, the signed declaration will be filed with the U.S. Patent and Trademark Office.

Please charge Deposit Account No. 19-2386 the amount of $130.00 for the required fee under 37 CFR. §§ 1.47(a) and 1.17(h). The Commissioner is hereby authorized to charge any amounts underpaid for this Petition, and credit any overpayments to the same Deposit Account No. 19-2386.

Respectfully submitted,

Roberta P. Saxon

Roberta P. Saxon
Agent for Applicants
Reg. No. 43,087

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